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ABSTRACT

Sex differences in antisocial behavior in 20 elementary school children were explored by using two constructs: need for achievement and need for social approval. It was hypothesized that sex differences would appear only under certain conditions. For boys, more antisocial behavior would occur when the need for achievement was frustrated, while for girls, frustration of the need for social approval would produce more antisocial behavior. Results were interpreted in terms of sex stereotypes and their subsequent effects on boys and on girls. (SBT)

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SEX DIFFERENCES IN DETERMINANTS OF ANTISOCIAL BEHAVIOR

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Studies of antisocial behavior in small children have typically found either that boys are more antisocial and aggressive than girls or that there is no difference. As is customary with psychologists, those studies that found no difference have been disregarded as merely failures to disprove the null hypothesis, and thus a sex stereotype has been perpetuated. But there is an alternative interpretation, which is that a sex difference in antisocial behavior only exists under certain circumstances. If sex differences appear only under certain conditions, rather than being consistent, all-pervasive presences, then it is crucial to make certain that one knows what effects a given experimental manipulation has on subjects. An experimenter may believe he is treating all subjects alike because he uses a single experimental manipulation on all of them. But between a treatment and its effect comes the cause. An experimental manipulation (A) may arouse different needs in different degrees (B) in the two sexes; and if different needs are aroused in different degrees, the two sexes are likely to produce different kinds or degrees of behavior (C). Before drawing hasty conclusions that A causes C -- in this case, for example, that frustration on a school task (A) makes boys behave more aggressively than girls (C), it is important to ascertain whether the manipulation itself produces the sex difference in behavior or whether the sex difference results from different need strengths. In evaluating the literature on sex differences in aggressiveness, the sex differences in two salient needs must be considered. They are need for achievement and need for social approval, the first of which is stronger in boys (McClelland et al., 1953; Maccoby, 1966) and the second of which is stronger in girls (Maccoby, 1966; Crandall et al., 1960; Bach, 1945).

Because need for achievement (nAch) is typically higher in boys, frustration of that need would likely result in more aggressive or antisocial behavior than frustration of that need in girls. If all subjects fail on a task, that

failure per se is crucial to the boys and will frustrate them, arousing their need for achievement. But for the girls the failure is less important if there is another route to social approval, as when an experimenter is present in the room. In a study or classroom in which both boys and girls fail a task and then sex differences in behavior are measured, those sex differences will probably be magnified: the boys' more basic need (for achievement) remains frustrated, but the girls' more basic need (for approval) can be satisfied if the experimenter or teacher remains in the room. If boys and girls are both exposed to a failure experience, then girls have a way out, and boys have less of a way out. The girls' way out is instead to win social approval. So in a situation in which both sexes fail, then if an adult is present and the children have scope for prosocial behavior, the girls will make use of that to redress the balance and gain approval, whereas the boys will get less out of that.

From an experimental point of view, then, studies that include failure experiences (Berkowitz and Connor, 1966; Lippitt and Gold, 1959; French, 1955)* would thus be more likely to produce a sex difference in antisocial behavior than studies that do not (Handlon and Gross, 1959; Murphy, 1937; Maurel-Semin, 1952)..That, in fact, appears to be the case. Similarly, studies that have an adult present (Luria et al., 1963; Lippitt and Gold, 1959; Rosenblith, 1959; Sears et al., 1965)** while the dependent measure is being taken would be more likely to produce a sex difference in antisocial behavior than studies in which no adult is present (Staub, 1971, unpublished manuscript; Hartshorne and May, 1930; Hartshorne et al., 1929), and that, in fact, appears to be the case.

From a clinical point of view, school is often a failure-with-adult-observation situation. In school a child fails and is seen to fail. When boys

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* See also Zunich, 1964

**See also Grinder, 1964

fail in school and are seen to fail, that is that: They have failed. When girls fail in school and are seen to fail, they can be nice and sweet, to get approval in that way, which makes it a better situation for them.

The study was designed as follows. There were four conditions, each of which contained 10 girls and 10 boys, of mean age 8 years and 6 months. There were a Success and a Failure condition. The children were given a coding task, which was arranged so that the results could be interpreted to them as either a successful or a failing performance. Then the children, after that interpretation, were given six candies for doing the task, and they were told that they could either keep all of those candies for themselves or leave some or all for other children. That was done under each of two conditions, either Observation -- when an adult would obviously be there while they made their decision and took action with respect to the candy, and Non-observation -- when no adult was present. The dependent variable was how much candy the children would leave under the various conditions.

A 2 X 2 X 2 analysis of variance for nonparametric designs (Grizzle et al., 1969) revealed the following (Table 1). The girls in the Failure Observation condition left the most candy for other children -- they behaved the most altruistically or prosocially, and the boys in the Failure Non-observation condition left significantly less and on a rank-order basis (Table 3) left the least. A comparison of the cell means for the Girls' Failure Observation and Boys' Failure Non-observation conditions revealed the difference to be highly significant ($\chi^2 = 15.67$, $p < .0001$). Whereas the Failure Observation girls' mean (see Table 2) was 3.8 pieces of candy, the Failure Non-observation boys' mean was only 0.4 pieces. These two means were the highest and lowest, respectively, of all experimental conditions. Furthermore, this was the only significant sex difference found. No other comparison of any boys' group with any girls' group produced a significant difference.

To rehearse the model: When children fail they are frustrated. If they are observed, they will be under certain constraints to behave altruistically anyway, the girls because they are supposed to be nice to get approval, and the boys because of fear of authority. It was predicted that the Failure Observation condition would result in children leaving the most candy but that within that condition girls would leave more than boys. It was also predicted that in the Failure Non-observation condition children would leave the least candy because without observation girls would behave more as boys do, and within that condition the boys would leave least, being more frustrated by that failure. The Kendall rank-order coefficient did give a significant rank-order according to these predictions (Table 3), with the Success conditions in the middle.

An analysis of variance was also performed among the variances (Miller, 1964). That was based on the following premise: If a group of children (e.g., boys) is taught from an early age that achievement is crucial to other people's evaluation of them, then they must make some definite decision about achievement; they must decide either that they will worry about it or that they will not but will find some way to deal with society's tendency to devaluate them because of their lack of sex-appropriate concern. For a dimension which is of significance to a group, therefore, that group will have a coherent approach or strategy of response and show little variance on that dimension. Thus, the boys would show little variance in relation to the Success-Failure dimension, because it is salient for them. But for girls, the variation would verge on randomness. If the dimension is <u>not</u> salient there will be scope for individual differences, and there will be much variance. Thus, in terms of within-cell variances, the girls' behavior with respect to achievement would be expected to verge on randomness, while the boys' variance would be minimal. The opposite-sex pattern would be predicted for social approval.

The findings were the following (Table 5): The pure "achievement" condition

was Failure Non-observation, for it was in that condition that children experienced task failure and were then given no chance either to succeed on a task or to win social approval another way. The pure "social approval" condition was the Failure Observation condition; task success often brings approval, but here the children had failed on a task, after which they were given the chance to win social approval As expected, there was a significant three-way interaction for the variances ($F=4.06$, $p < .05$), such that the girls' smallest variance was in the Failure Observation (social approval) condition,* and the boys' smallest variance was in the Failure Non-observation (achievement) condition. The girls' greatest variance appeared in the Failure Non-observation condition, in which they had just been denied social approval (due to their failure on the task) and, furthermore, all chance to earn social approval was excluded (no adult was present who might have rewarded them for leaving a lot of candy). Therefore, the Failure Non-observation condition was the least relevant for girls, because it was the most totally divorced from the chance to earn social approval. For boys, the greatest variance appeared in the Failure Observation condition, in which their frustration over task failure had been aroused and they were then put in a situation filled with social pressure. Even boys who are not particularly anxious to win social approval do, however, fear social disapproval or punishment, such as often results from antisocial behavior. Some boys apparently reacted primarily to the fear of punishment which resulted from the Observation part of the situation,

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* Although numerically the girls' least variance was in the Success Non-observation condition, that variance is actually virtually identical to the variance for girls in the Failure Observation condition. Reasoning similar to the above would account for the small variance in the Success Non-observation condition for girls, because the success would satisfy their need for approval, and the lack of an observer would not arouse the need again, nor would it put social pressure on the girls to behave prosocially (as Success Observation would do).

thus producing wide variation in responses. (The experimenters' subjective observations of the children's incidental, non-measured behavior in the experiment supports this interpretation of the data.)

One other point related to the girls' Failure Observation condition concerns theories of moral development. Piaget (1932) and Kohlberg (1964) have both suggested that there is a stable order of progression through the stages of moral development but that the speed of progression can vary from one child to another (Elkind, 1970; Langer, 1969). That speed is known to be increased by a higher intelligence quotient and by social class. The subjects in this experiment were from the chronological age group at which their middle-class peers would be preparing to begin to share as much as half of their candy with other children. Therefore, it is likely that these children were nowhere near that stage, since our subjects were from the lower social classes. This is borne out by the fact that in no condition other than girls' Failure Observation did the children leave as much as half of their candy. Only in girls' Failure Observation did the mean go over the halfway mark ($\bar{x}$=3.8). This illustrates how, by just the right combination of circumstances, it is possible to cause children to behave as if they were in a stage of moral development which is one step above their actual current level. Piaget had shown that this was possible in principle, but the current study underlines the power of social approval to change girls' behavior.

It can be tentatively suggested on the basis of the Sex X Feedback trend (Table 1) in the present research that some studies show no sex difference because a sex difference in antisocial behavior <u>exists</u> only under some circumstances. As suggested earlier, studies which include failure for all subjects may be more likely to produce a sex difference than studies which omit failure or include success experiences for all subjects.

A sex difference in prosocial behavior might also be aggravated by an experi-

rimenter's failure to make clear whether the child's behavior would be observed. It is known that the possibility of obtaining approval per se tends to be more important to girls than to boys, as discussed earlier. Consequently, it would not be surprising if the boys assumed no one would be watching (i.e., boys' Non-observation) but the girls behaved prosocially, "just in case" (girls' Observation) The present study has demonstrated that under such conditions the sex difference in behavior would be maximized.

An implication of the present data is that future investigators would do well to determine whether there are unequal variances in their cells. It appears that, in drawing conclusions about the permanence of sex differences in behavior, one ought to observe not only the two sexes average tendencies but also their malleability and the circumstances which can increase or decrease the uniformity of their responses. The variance findings in the present study highlight the importance which sex differences in past history play in children's interpretations of a situation. In the Failure Non-observation condition, when the children were left free to respond only on the basis of their failure, the boys' uniform behavior contrasted strikingly with the girls' widely varying responses. Clearly, the boys felt called upon to behave in a particular way, but the girls did not. As discussed, the reverse pattern occurred in the Failure Non-observation condition.

What do the data suggest about the permanence of sex differences in behavior? In school, and frequently in frustration experiments, children have a choice of whether to deal directly with their failure or to shift the dimension of interactio elsewhere. The findings on variances in this experiment (which were not predicted) suggest that girls will make that shift in a significantly uniform fashion but that boys will not do so. This is not to deny that members of both sexes are to some extent affected by both kinds of needs. One other aspect of the data suggests the fruitfulness of further work in the area. That is the distribution of relative uniform as opposed to more nearly random responding for the sexes in different

conditions, which was discussed earlier. Work by previous researchers also suggests that the sex difference in choice of dimension of interaction is real. Such experimental work as that of Hood and Back (1971) exemplifies this. They found that, when males and females were asked to volunteer to be subjects in several experiments which were described to them at length, the males most often chose the clearly competitive experiment, and the females chose the one concerned with social approval. Girls, when given the chance, choose the social approval dimension for interaction, whereas boys do not.

Many earlier studies had attempted to elicit antisocial behavior and, in the process, incidentally included either a success or a failure experience or else included the presence or absence of an adult for all subjects. At best, some of the studies systematically varied one or ther other of the needs for achievement and for social approval. In the present study, with variations in both of these dimensions, an attempt was made to simulate the school experience. Further, it was attempted, by varying two dimensions which are sex-differentially important to children, to demonstrate that combinations of these two dimensions could affect the magnitude of sex differences in antisocial behavior. The current study provided some support for these notions by producing a maximal sex difference in antisocial behavior through changes in environmental conditions and abolishing that sex difference through other environmental changes. It is possible that the effect would have been even more dramatic if the subjects had been white and middle-class, for the subjects were black, low SES children, whereas the hypotheses were based upon research using white, middle-class children. This is an important point because of such facts as that black girls' nAch is higher than that of white girls. An unpredicted but significant pattern of variances suggested that the sex differences may increase or decrease in ways which would appear in the variances rather than in the means. But both the mean and the variance data

point up the promise of the theoretical basis outlined here for future insight into the nature and pattern of sex differences.

What might be the clinical application for this approach? Considering the effect that sex stereotypes have on the way children live in a substantial segment of their lives, namely the classroom, it is apparent that a particular sex stereotype actually redounds to the advantage of women. Because little girls are rewarde (by parents and teachers) for seeking social approval and boys are less rewarded for that, and because boys are punished more than girls for failures to achieve, the classroom is a happier place for girls. It should be noted, however, that these same facts will make achievement motivation for its own sake less likely (because less necessary, less rewarding) for girls. These factors seem a likely reason (though certainly not the only one) that boys appear in reports of learning failure so much more than girls: Society cares, and, therefore, society notices more when boys fail than when girls fail. This study focuses attention on the point that sex stereotypes have adverse effects in some situations on males and in others on females. They have adverse effects on people.

TABLE 1

ANALYSIS OF VARIANCE FOR MEAN NUMBER OF CANDIES LEFT

	χ^2	p<
Sex (A)	2.44	.119
Feedback (B)	3.21	.073
Observation(C)	8.68	.003**
A X B	2.31	.129
A X C	0.07	.797
B X C	7.20	.007*
A X B X C	0.07	.798

* p < .01
** p < .005

TABLE 2

MEAN NUMBER OF CANDIES LEFT*

Condition	Boys' Mean	Girls' Mean
SO	2.6 (1.6)	2.4 (1.4)
SN	2.3 (1.3)	2.5 (1.5)
FO	3.6 (2.6)	4.8 (3.8)
FN	1.4 (0.4)	2.5 (1.5)

* Means were linearly transformed in the procedure for the non-parametric analysis of variance. Raw means are noted here in parentheses.

TABLE 3

PREDICTED AND ACTUAL RANKINGS OF CONDITIONS, WITH MEANS

Condition	Predicted Rank	Actual Rank[a]	Actual Mean[b]
Girls' FO	1	1	3.8
Boys' FO	2	2	2.6
Girls' SO	4.5	6	1.4
Boys' SO	4.5	3.5	1.6
Girls' SN	4.5	5	1.5
Boys' SN	4.5	7	1.3
Girls' FN	7	3.5	1.5
Boys' FN	8	8	0.4

a
By Kendall rank-order correlation coefficient test, r= .607, p < .031, two-tailed, for correlation between predicted rank-order and actual rank-order.

b
Mean=average number of candies left by children in that condition

TABLE 4

ANALYSIS OF VARIANCE ON THE VARIANCES

	F	p<
Sex (A)	.080	NS
Feedback (B)	.002	NS
Observation(C)	.100	NS
A X B	1.210	NS
A X C	1.780	NS
B X C	0.310	NS
A X B X C	4.060	.05

TABLE 5

VARIANCE BY CELL

Condition	Boys' Variance	Girls' Variance
SO	4.04	3.82
SN	3.79	1.83
FO	4.93	1.96
FN	0.50	6.50

TABLE 6

ASSIGNMENT OF SUBJECTS TO CONDITION

	Observation	Non-observation
Success	10 girls 10 boys	10 girls 10 boys
Failure	10 girls 10 boys	10 girls 10 boys

Age range for all subjects: 7 years and 1 month to 10 years and 3 months

Average age for boys= 8 years and 7 months

Average age for girls= 8 years and 6 months

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